

Remarks

This application has been carefully reviewed in light of the Final Office Action dated October 8, 2008. By way of this amendment, Claims 23, 32, and 33 have been cancelled, and claims 1 and 24 have been amended. Upon entry of the proposed amendments, claims 1-4, 21, 22, 24, 25, and 28 will be pending. Further review and reconsideration is requested in light of the following remarks.

1. Rejections Under 35 U.S.C. §103

Claims 1, 2, 22, and 25 have been rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 4,050,237 (Pall et al.) in view of US Patent 5,050,375 (Dickinson).

Claims 3, 4, 21, 23, 24, 28, and 32 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Pall et al. in view of Dickinson and further in view of US Patent 6,067,489 (Letang et al.).

Claim 33 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Pall et al. in view of Dickinson and further in view of US Patent 6,312,080 (Marsh et al.).

These rejections are respectfully traversed. Pall et al. describes a gas turbine engine including a sump and associated structure for lubricating rotating bearings. The sump is provided with a vent line 39 for relieving pressure therein by venting oil-laden air.

Dickinson describes a power generation apparatus (see Figure 1) in which a coal/water slurry is burned in a phase reactor 118 to produce a hot, high-pressure gas-steam mixture that is provided to a series of turbines 153, 156, 158 which extract energy to drive a generator 160. Between the phase reactor and the turbines, the gas-steam mixture is intercooled and treated in several ways to remove ash and particulates. In particular, an eductor 148 is used to move slurry fines from a vessel 139 to a deaeration drum 149.

The rejection states that it would have been obvious to modify Pall et al. with the teachings of Dickinson to arrive at the claimed invention. Applicant respectfully disagrees. Neither reference recognizes or addresses how to solve the problem of modulating the pressure in a turbine engine oil sump so as to maintain adequate seal pressurization flow both at idle and at high pressure conditions. Furthermore, the eductor described by Dickinson et al. is simply a generic solids-liquid mixing device unrelated to the oil sump or bearing field, and is not remotely related to the stated problem. As best can be determined, the eductor of Dickinson et al. operates continuously or at the least at all power levels.

Letang et al. describes a method for controlling an internal combustion engine in which an electronic control unit 20 (see Figure 1) receives data from a plurality of sensors and uses the data to control multiple engine components, in particular one or more cooling fans. The rejection states that Letang et al. discloses several claimed method steps, including for example terminating a reduction when flow through a vent exceeds a floor, raising speed of the engine, terminating the reduction of exit pressure, and so forth. Applicant has carefully reviewed Letang et al., especially the cited columns and lines (e.g. column 3, lines 18-30, column 8, lines 17-50, and column 19, line 60 through column 20, line 17) and can find no disclosure of the claimed method steps, rather it is simply a generalized description of an electronic control system. There is simply no discussion of controlling lubrication vent air flows or sump vent differential pressures.

Marsh et al. describes a method of replacing the lubrication oil of an internal combustion engine by feeding fresh oil into the lubrication system, and selectively metering used lubrication oil into the fuel system to be burned off. Marsh et al. is cited for its teaching of a gravity-fed sump and this is not disputed. However, in the light of the cancellation of claim 33, the citation of Marsh et al. is moot.

2. Claim amendments

Independent claim 1 has been amended to more particularly specify that the present invention applies to the operation of an eductor to control sump vent pressures in a bearing sump of a gas turbine aircraft engine. Claim 24 has been amended for minor clarification and claims 23, 32, and 33 have been canceled.

Conclusion

Applicant strongly believes the present invention is not disclosed or remotely suggested by the prior art of record and believes that the rejections should be withdrawn. Reconsideration of the rejections and objections is requested, and allowance of 1-4, 21, 22, 24, 25, and 28 at an early date is solicited. To the extent the Examiner disagrees, Applicant submits that the proposed amendments place the claims in better form for appeal and reduce the issues for consideration, and should be entered for the purposes of appeal.

If any extension of time is required in connection with this paper, petition is hereby made therefor. If any fees are due in connection with this paper, the Director is authorized to charge them, or credit any overpayments, to Deposit Account No. 50-4137.

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